

## Marine Phytoplankton and Zooplankton from the North-Eastern Bay of Bengal, Bangladesh

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**Abstract :** The marine phyto and zooplankton of the extreme north-eastern part of the Bay of Bengal, off the coast of Bangladesh have been studied. Relative occurrence of phyto and zooplankton and their relationship with physico-chemical conditions (f.e. temperature, salinity, dissolved oxygen, carbonate, phosphate, and sulphate) of the water and Shannon-Weiber diversity indices were also studied. The phytoplankton communities represented by 25 genera with 69 species of Bacillariophyceae, 5 genera with 12 species of Dinophyceae and 6 genera with 16 species of Chlorophyceae have been found. A total of 24 genera of 25 species belonging to Protozoa, Coelenterata, Chaetognatha, Nematoda, Cladocera, Copepoda, and decapoda have been recorded. In addition, the average phytoplankton was 80% of all collections, whereas the zooplankton was 20%, Z ratio of about 4:1. The total numbers of plankton individuals per liter were generally higher during low tide than those of high one. Shannon-Weiber diversity indices were highest (3.675 for phytoplankton and 3.021 for zooplankton) in the north-east part and lowest (1.516 for phytoplankton and 1.302 for zooplankton) in the south-east part of the study area. Principal Component Analysis (PCA) showed the relationship between pH and some species of phyto and zooplankton where all diatoms and copepods have showed positive correlation and dinoflagellates showed negative correlation with pH.

**Keywords :** plankton presence, shannon-weiber diversity index, principal component analysis, Bay of Bengal

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